F·A·A·M facility for airborne atmospheric measurements

FLIGHT FOLDER

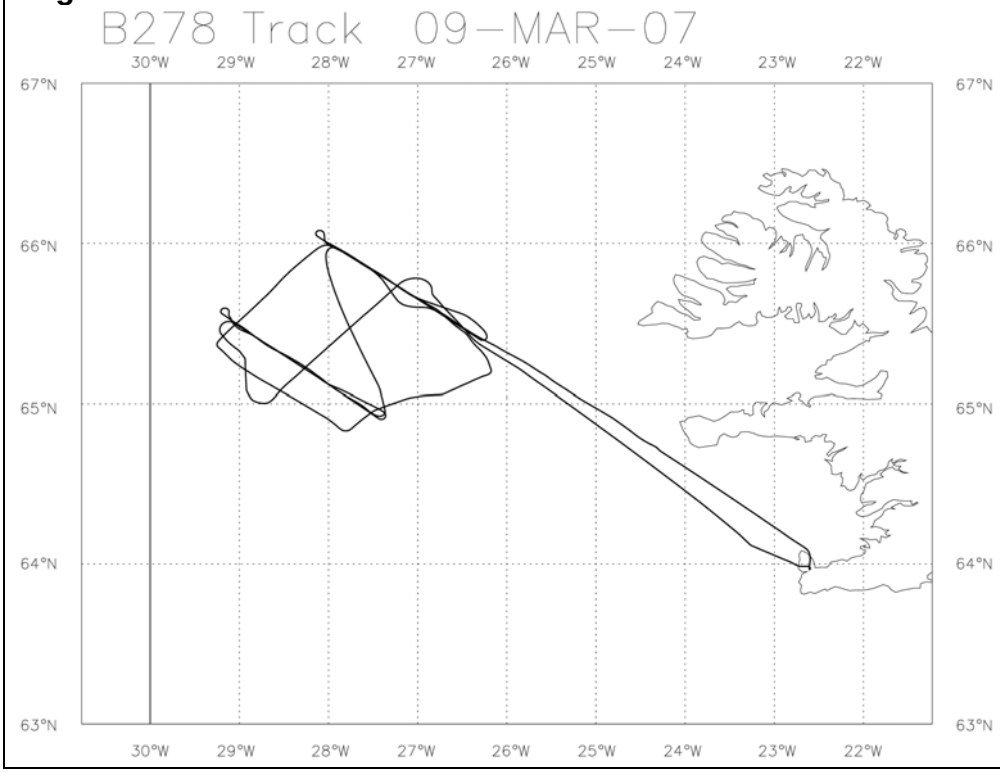
Flight No.:	B278
Date:	09 March 2007
Take Off	10:31:18Z
Landing:	15:11:03Z
Flight Time	4h39m45

Campaign: GFDEX – Barrier Wind / Surface Fluxes

Operating Area: Denmark Strait (N)

POB	Position	Name	Institute
1	Captain	Alan Foster	Directflight
2	Co-pilot	Steve Ball	FAAM
3	CCM	Gaynor Ottaway	Directflight
4	Mission Scientist 1	Ian Renfrew	University of East Anglia
5	Flight Manager	Alan Woolley	FAAM
6	Cloud Physics	Kate Turnbull	FAAM
7	AVAPS / CCM2	Stuart Heath	FAAM
8	Mission Scientist 2	Tom Haine	John Hopkins University
9	Mission Scientist 3	Shunli Zhang	Toronto University
10	Mission Scientist 4	Tadayasu Ohigashi	Toronto University
11	Mission Scientist 5	Dave Sproson	UEA
12			
13			
14			
15			
16			
17			
18			
19			
20			

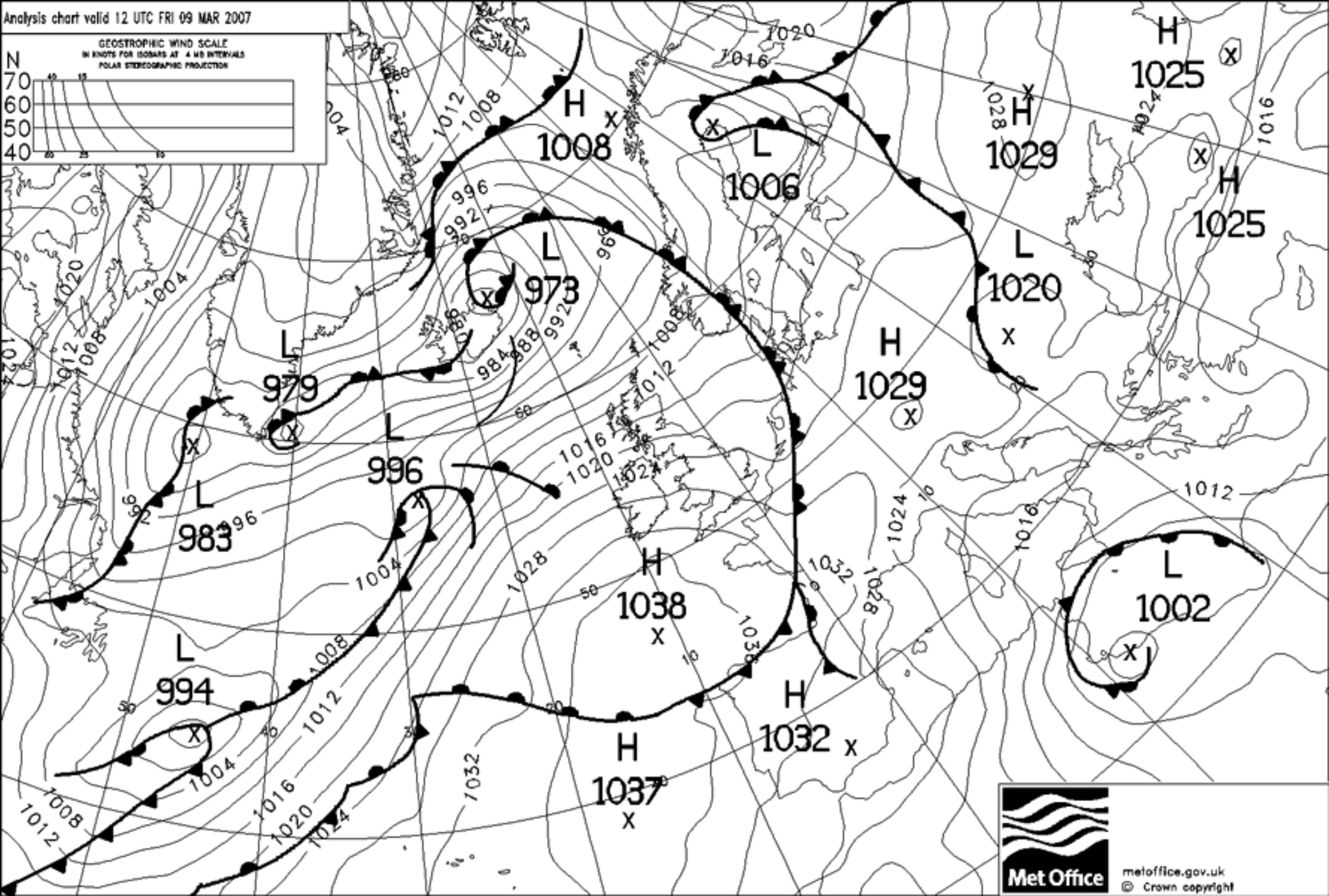
Flight Track:



FLIGHT SUMMARY

Flight No B278
Date: 9/3/07
Project: GFDEX
Location: Denmark Straits (East of Iceland)

Start Time	End Time	Event	Height (s)	Hdg	Comments
094749		Start-Up	1.1 kft	296	Hngr 63.9746N, -22.5981W
102046		engine start	1.1 kft	276	
102052		inu to nav	1.1 kft	276	
102545		taxy	1.1 kft	198	
103118		T/O	1.1 kft	000	from kef
103637		QNH	2.0 kft	313	980
110744	112125	Run 1	0.87 - 0.80 kft	318	
112255	113317	Run 2	0.79 - 0.85 kft	222	
113417	114728	Run 3	0.85 - 0.88 kft	130	
114840	120937	Run 4	0.90 - 0.87 kft	045	
120937	122351	Run 5	0.87 - 0.80 kft	322	
121324		qnh	0.87 kft	316	987mb
122720	124345	Run 6	2.1 - 2.3 kft	139	
124508	124811	Profile 1	2.3 - 6.8 kft	123	
125100	125302	Run 7	3.8 kft	299	
125342	130020	Run 8	3.3 kft	322	
132224	133534	Run 9	0.88 - 0.84 kft	317	
133937	135532	Run 10	2.3 - 2.2 kft	134	
135834	141151	Run 11	3.3 kft	306	
141157	142326	Profile 2	3.3 - 17.0 kft	320	
142357		Sonde 1	17.0 kft	040	
142650		Sonde 2	17.0 kft	043	
142931		Sonde 3	17.0 kft	043	
143218		Sonde 4	17.0 kft	044	
143501		Sonde 5	17.0 kft	042	
144133		Sonde 6	17.0 kft	144	
151103		Land	0.88 kft	086	at Keflavik


Analysis chart valid 12 UTC FRI 09 MAR 2007
GEOSTROPHIC WIND SCALE
IN KNOTS FOR ISOBARS AT 4 MB INTERVALS
POLAR STEREOGRAPHIC PROJECTION
N
70
60
50
40
H 1008
L 1006
H 1025
H 1029
L 973
L 1020
H 1025
L 979
L 996
H 1029
L 983
H 1038
L 1002
L 994
H 1037
H 1032
Met Office
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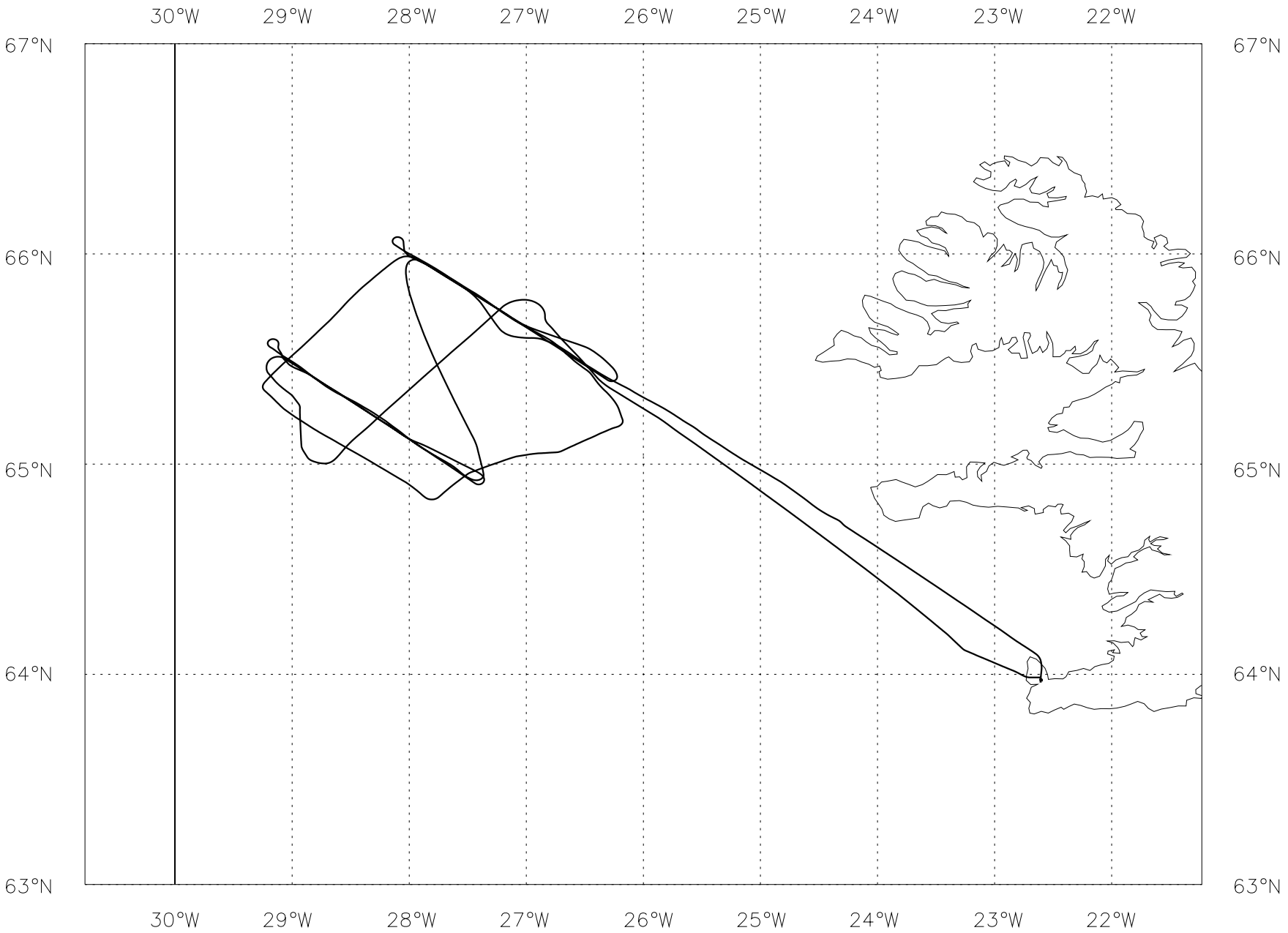
B278 Track 09-MAR-07



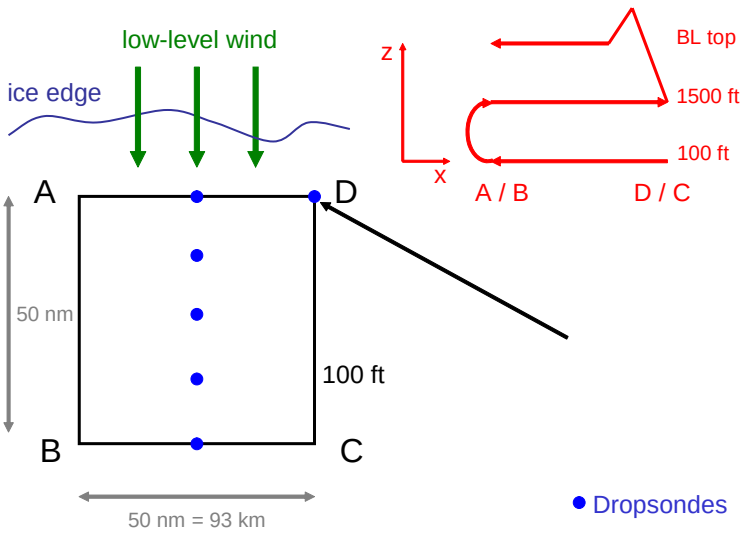
GFDex Sortie Brief – B278 – 9th March 2007
Lagrangian flight and surface fluxes (Plan 23)

Mission Scientists: Ian Renfrew, Tom Haine, Shunli Zhang, Tadayasu Ohigashi, Dave Sproson

Aims

- Map out the surface fluxes off the sea-ice edge
- Sample a boundary-layer air parcel, follow downwind, re-sample same air parcel
- Total dropsondes 5; Total distance 671 nm + transits; Total time ~5 h.
-

GFD23	Time	Manoeuvre	Distance (nm)	Duration (min)	Total time (min)
1	1030	Take off Keflavík , transit to point D			
2		Straight low-level run at 100 ft (or MSA) perpendicular to the forecast low-level wind from D to A. Provisional heading ~310deg	50	15	
3		Straight low-level run at 100 ft from A to B	50	15	
4		Straight low-level run at 100 ft from B to C	50	15	
5		Straight low-level run at 100 ft from C to D	50	15	
6		D to A at 100 ft	50	15	
7		Turn then A to D at 1500 ft	50	15	
8		Turn then profile from 1500 to outside of boundary-layer (~6000 ft). Descending back to boundary-layer top (3000-5000 ft), with the remainder of D to A at BL top.	50	15	
9		A to C at height of BL top	71	21	
10		C to B at 100 ft	50	15	
11		Turn then B to C at 1500 ft	50	15	
12		Turn then profile from 1500 to 6000 ft, descending back to boundary-layer top (3000-5000 ft), the remainder of C to B at BL top.	50	15	
13		Profile ascent to 15-20 kft from B to midpoint of BC **Dropsonde release here**	25	7.5	
14		Midpoint BC to midpoint AB at 15-20 kft **Dropsonde releases evenly spaced to midpoint of AB (4 along line, not including midpoint BC).**	50	15	
15		Turn and midpoint AB to D at 15-20 kft **Dropsonde release at D.**	25	7.5	201
16		Transit back to Keflavik			



Mission Scientists Debriefing Sheet

Flight No. **B278 – Lagrangian flight and surface fluxes (Plan 23)**
Date: **9th March 2007**

Aims

- Map out the surface fluxes off the sea-ice edge
- Sample a boundary-layer air parcel, follow downwind, re-sample same air parcel
- Total dropsondes 6; Total distance 671 nm + transits; Total time ~5 h.

Assessment of the Flight

Generally very successful.

To avoid turbulence probe freezing we went for another low-level transit and the low-level legs first. The DABC box at 100ft went well, air-sea temp differences of 2-5 degC and winds of 20 m/s at upwind part of box, lower wind speeds at downwind end of box. Hence decision taken to move downwind second sampling of air-parcel 10nm upwind (to C2-B2), so that air-parcel would be re-sampled at correct time. This was achieved, within about 5 minutes, according to initial estimates. Cloud base around 500 feet during box.

Lagrangian sampling: first 100 feet leg good, but during 1500ft leg turbulence probe was lost. Profile at end revealed BL top around 2500ft (initially thought this was 3000 ft, as this is what it was on Horace tephigram, had forgotten this was with p_surface = 1013 mb). Hence 3rd DA leg flown at 2500 ft.

Opportunity of saw-tooths during diagonal downwind leg from A to C2 was missed. Forgot to put it in sortie brief and didn't think about it till too late. Second air-parcel sampling was fine: legs at 100 ft (some turbulence holes unfroze here, but not all), then 1500 ft then 2500 ft. Perhaps should have done profile here. BL top starts around 2500 ft, at least this is start of temperature inversion, end of inversion around 925 mb. Profile ascent at end of C2-B2 leg.

Dropsonde releases went well – all 6 fine. Dropsonde leg into the wind.

Summary of weather conditions

Low pressure system over Iceland, to west of Iceland in moderate (20 m/s) northeasterly flow associated with synoptically-driven barrier influence flow. Forecast heat fluxes quite large, but not huge as air temperature not that cold.

pitot static ~100
attack diff ~2
sideslip diff ~-0.05
attack chart ~137
sideslip chart ~153

Mission Scientist's Log

Flight No **B**378 Date 9 March 2007 Name Ian Renfrew Page 1 of 3

GMT	Run/ Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
10·30	1 km.				Take Off
10·54		100			Heimen Cal. complete at 100 feet.
10·58					Change in wind direction from 60 to 35
10·58					Coincident with colder air temps.
11·05		100			Steady 20 ms^{-1}, 40°
11·07	2	"			Run 1, D to A, 100 feet.
11·13	2	"			Air sea ΔT ~2-3°C, $\bar{U}$ = 20 ms^{-1}, 45°
11·21	2	"			End Run D to A
11·22	3	"			Start Run A to B
		"			Wind direction changing clouds from 45 to 50
11·33	3	"			End Run $\bar{U}$
11·34	3	"			Start Run B to C
11·42	34	"		65° 28°12'	Wind now 15 ms^{-1} 60°.
11·47	34	"			End Run
11·48	45	"			Start Run C to D
11·52	45	"			Steady 15 ms^{-1} 60°
11·58	45	"			WD decreasing to ~50°, 17 ms^{-1}
12·04	45	"			Wide of track, 16 nm.
12·07	45				WS ~20 ms^{-1}, WD ~45-50°
12·09	5				End C to D
12·09	6				Start D to A. Start of Lagrangian Part.
12·17	6				Passed F $\bar{U}$ = 21-22 ms^{-1} 45°
12·23	6				End D to A.
12·24	67				Cloud base ~ 500 feet

Start L

L1 Start 12·09

Mission Scientist's Log

L2 Want to start ~ 13·09

Flight No B.278 Date 9 March 07 Name Ian Renfrew Page 2 of 2.

GMT	Run / Profile ITEM	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
12·25	7	~~15000~~		A	Ascent to 1500, & turn.
12·27	7	1500			A to D.
12·33	7	1500			$\bar{U}$ = 22 ms^{-1} to 21 ms^{-1}, 47°
12·38	7	1500			$\bar{U}_{AD}$ = 20 ms^{-1} 47° (Turb probe icing)
12·43	7	1500			End of Run
12·44	8			~~Profile Points~~	Continue run, turn & profile to 6000 ft. ~~Profile~~
12·45	8				Profile start.
12·48	8				Profile End, Profile descent to 3000
12·51	8	3000			Run
12·53	8	2500			Run interrupted, descend to 2500.
12·53	8	"			Run continues at 2500
13·00	8	2500			End of Run D to A, inside turn.
13·00	9	2500			Diagonal Run A to C_2
13·09	9	"			θ_e increased from 285 to 287 on les.
"	9				~~BL high, & just would not [illegible]~~
13·14	9	2500			θ_e increased from 285 to 290 on les
13·18	9	2500			End of A to C_2, Descend profile.
13·22	10	100			C_2 to B_2
13·25	10	100			"turb probe is coming back!" ??
					θ_e trace is great indicator of BL top
13·35	10	100			End of Run C_2 to B_2 at 100 ft
13·38	11	1500			Ascend & turn - still within BL.
13·39	11	1500			Run B_2 to C_2 Starts
13·50	11	1500			In cloud - no turb probe.

Mission Scientist's Log

Flight No B278 Date 9 March 07 Name Ian Renfrew Page 3 of 3

GMT	Run / Profile (ITEM)	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
13·55	11	1500			End of Run, ascend to 2500 at C_2
13·58	12	2500			Start of Run C_2 to B_2 at 2500 feet.
14·00	12	2500			BL top ~2500, can see inversion in thermistors
"	"	"			& reduction in θe variance.
"	"	"			More turbulence felt at BL top, than 1500ft
14·11	"	2500			End of Run C_2 to B_2
14·11	13				Profile ascent
14·13	13	5000			BL top about 925mb (top of inversion)
14·23	13	17kft.			Drop1-
14·26	14	"			Drop2-
14·29	14	"			Drop3-
14·32	14	"			Drop4-
14·35	14	"			Drop5-
14·41	15	"			Drop6-
15·11	16	"			Land.

4h 40

CLOUD PHYSICS LOG

Flight No. B278 **Date: 09/03/07** **Operator: KFT`** **Page 1 of 1**

G.M.T.	PCASP		FSSP	SID1	2D2-C			2D2-P			Remarks
DRS Time	Conc/cc	Mean R	Block Transfer	Particle Count	Conc/L	Max Size	Habit	Conc/m3	Max Size	Habit	
10:50:33	126	0.13	2	-	20	225	1	608		1	First 2D images T=PS04
10:54			Bases incr'd								
11:02:10	169	0.09	6	-	11	800	2	466	3200	2	T=PS02
11:05:00	135	0.13	10	-	16	800	2	1125	3200	2	T=PS03
11:07:46	101	0.11	12	-	20	625	2	608	3200	2	T=PS03, Start Run 1
11:10:00	152	0.10	13	-	30	625	5,8,2	1116	3200	2,5	T=PS03
11:15:00	134	0.09	19	-	8	800	5,2	91	800	8,5	T=PS03
11:20:00	156	0.10	23	-	28	725	5,2,8	3691	1200	8,2	T=PS02
11:25:00	97	0.12	30	-	10	550	5,2,8	366	1200	2	T=PS02
11:30:00	75	0.08	33	-	8	800	5,2,8	1050	3200	2,5	T=PS04
11:35:00	69	0.14	37	-	28	700	5,2,8	4600	3200	2,5	T=PS04
11:40:00	108	0.11	41	-	11	675	5,2	741	1600	2	T=PS04
11:45:00	126	0.16	47	-	61	800	8,1	1725	3200	2	T=PS04
11:50:00	107	0.13	60	-	29	350	2	1183	3200	2	T=PS04
11:55:00	82	0.12	72	-	34	775	2,8	1650	4800	2	T=PS04
12:00:00	100	0.14	88	-	23	750	2,8	2066	3200	2	T=PS04
12:05:00	99	0.14	97	-	38	750	2	1833	3200	2	T=PS03
12:10:00	75	0.12	100	-	10	650	2,5	1516	3200	2	T=PS03
12:15:00	59	0.10	105	-	21	550	2,5	1341	4800	2	T=PS03
12:20:00	59	0.12	112	-	28	775	2,5,8	3433	3200	2	T=PS02
12:25:00	94	0.15	127	-	9.5	775	8,3	166	1600	3	T=MS03 1500FT, Heaters ON
12:30:00	66	0.26	258	-	55	800	8,5	6491	1200	3	T=MS01
12:35:00	124	0.18	360	-	27	550	5,8,3	1908	6400	3	T=MS01
12:40:00	55	0.20	460	-	78	750	5,8,3	1958	4800	3	T=MS01
12:45:00	48	0.19	598	-	41	775	5,7,8,3	666	6400	3	T=MS01
12:50:00	39	0.13	617	-	21	650	3,8,7	1166	3000	3	T=MS01 3000FT
12:55:00	48	0.09	649	-	11	400	5,8,4	7498	3000	3	T=MS03
13:00:00	126	0.20	739	-	49	650	8,5	5008	1000	8	T=MS04
13:05:00	71	0.26	884	-	207	750	5,8.3	12800	3200	8,3	T=MS03
13:10:00	95	0.11	960	-	60	800	5,3,8	1700	3200	3	T=MS02
13:15:00	31	0.06	998	-	19	700	8,3	2350	1200	3	T=MS01
13:20:00	65	0.10	1019	-	50	800	8	5400	1600	8	T=PS02, 500FT, Heaters OFF
13:25:00	67	0.15	1031	-	16	550	2,8	933	5000	3	100F T=PS04
13:30:00	63	0.12	1038	-	17	525	2,1,8	1600	2000	3	T=PS04

CLOUD PHYSICS LOG

Flight No. B278 **Date: 09/03/07** **Operator: KFT`**

G.M.T.	PCASP		FSSP	SID1	2D2-C			2D2-P			Remarks
DRS Time	Conc/cc	Mean R	Block Transfer	Particle Count	Conc/L	Max Size	Habit	Conc/m3	Max Size	Habit	
13:35:00	60	0.12	1048	-	13	800	3,8	1491	3200	3	T=PS03
13:40:00	62	0.09	1140	-	120	800	3,5,8	8908	6400	3	HEATERS ON
13:45:00	122	0.15	1262	-	162	725	5,7,8	3500	6400	3	T=PS00
13:50:00	105	0.14	1382	-	74	800	8,3	1166	3200	3	T=PS00
13:55:00	130	0.09	1508	-	30	600	8,5	3008	1600	3	T=PS00
14:00:00	45	0.11	1559	-	31	775	3,8	3233	1600	3	T=MS01
14:05:00	34	0.11	1610	-	102	750	5,8	2200	1600	3,5	T=MS02
14:10:00	52	0.25	1693	-	214	800	5	26411	1600	5,3	T=MS02
14:15:00	44	0.08	1736	-	12	750	3	2358	1000	8	FL070
14:16:00	31	0.06	1737	-	8	625	8,5,7	4858	800	8	FL090
14:17:00	398	0.06	1738	-	31	675	3,4,5	7400	1000	8	FL110
14:18:00	60	0.08	1740	-	32	750	3,4,8	3891	1000	8	FL130
14:19:00	80	0.10	1741	-	52	425	8	14491	400	8	FL150
14:20:00	47	0.29	1743	-	35	400	8	10891	400	8	FL170
14:23			Bases incr'd								
14:23:58	85	0.07	1750	-	23	525	8,11	7216	400	8	SONDE 1
14:26:50	177	0.06	1754	-	57	350	8	7566	400	8	SONDE 2
14:29:32	127	0.06	1760	-	244	259	11,8	2225	400	8	SONDE 3
14:32:19	92	0.06	1762	-	10	350	8	1066	400	8	SONDE 4
14:35:02	80	0.08	1765	-	49	275	8	4775	400	8	SONDE 5
14:41:33	39	0.08	1777	-	188	375	8	12741	400	8	SONDE 6

Revision date: 15/03/2007 2:34 PM

CLOUD PHYSICS PROCESSING LOG

Flight number: **B278** **T/O:** 10:31:18
Date of flight: 09/03/07 **Land:** 15:11:03

A) FFSSP PROCESSING To Exeter		
Processing Stage	Done?	Comments
1) Transfer *.txt files from DVD to processing PC		
Bnnn_FFSSP_hh.txt for each hour of data Bnnn_FFSSP_HVMS.txt		**hh =** **Last sec processed =**
2) FTP the files (ascii) from the PC to directory PMSDATA: on FLOODS		**File size =**
3) FLOODS> **RUN MRFB:[PMS.FAST_FSSP]FSSP_EXTRACT_TAS** a) Flight number: **Bnnn** b) Path name: **MFDDATA:Bnnn_MFDX** c) Output directory: **PMSDATA:** d) Start time: *0 if unknown (see comment box)* e) End time: *240000 if unknown*		Use time just before/after take-off/landing. If T/O /landing just after/before the hour, ensure start/end time is before/after the hour if there is an FFSSP_hh.txt file for that hour.
4) FLOODS> **RUN MRFB:[PMS.FAST_FSSP]FFSSP_PROCESS_TXT** a) Flight number: **Bnnn** b) Directory: **PMSDATA:** c) TAS in processing: **Y** d) Vel threshold (clicks) **0** e) Calibration file: *Use the most recent calibration file.* Format FFSSP_CALddmmyyyy.txt Calibration files to be stored in MRFB:[PMS.FAST_FSSP] f) Adjust FFSSP time **Y/N** g) If Y, enter value to add to data time (seconds)		**Total glitches =** **Sec file written ok?** **Note calibration file used** Yes only if gross errors occur in FFSSP time eg; ~ 1hour
5) FLOODS> **WAVE** a) WAVE> **write_procffssp_to_m5,'pmsdata:Bnnn_procffssp.dat', 'mfddata:Bnnn_mfdX','pmsdata:Bnnn_m5procffssp',/auto** b) WAVE> **exit**		Use PVWAVE for this section **Note time correction applied to FFSSP by /auto =**
6) FLOODS> **MODIFY** a) Modifying datasets: **pmsdata:Bnnn_m5procffssp** b) Dataset: **mfddata:Bnnn_mfdX** c) New dataset: **mfddata:Bnnn_mfdY (y=x+1)** d) Parameter description file: *leave blank to use default*		**Input file size =** **M5 output file size =**
7) CHECKS: i). Are FFSSP and JW/Nevzorov LWC synchronized in time? *In flight_plot, parameters* *JW LWC para 535* *Nevzorov LWC para 602* *FFSSP LWC para 1202* ii). If not, repeat from step 5b replacing /auto with **addt=x** which adds x+20 secs to FFSSP time.		**Synchronized?**

CLOUD PHYSICS PROCESSING LOG

Flight number: **B278**
Date of Flight: 09/03/07

B) 2D PROCESSING		REPROCESS +1hr
Processing Stage	Done?	Comments
1) Transfer Bnnn.dat file from CD/DVD to PC	Y	
2) Zip up file on PC (Bnnn.zip)	Y	
3) FTP the zipped file (binary) from the PC to the directory SEADAS_DATA:[SEADAS_DATA] on FLOODS	Y	116266 blocks
4) Log on to FLOODS		
5) Unzip SEADAS_DATA:[SEADAS_DATA]Bnnn.zip	Y	**Size of Bnnn.dat = 546571**
6) FLOODS> **WAVE** WAVE> **CONVERT_SEADAS_FILE** a) Input file: **SEADAS_DATA:[SEADAS_DATA]Bnnn.dat** b) Output file: **SEADAS_DATA:[SEADAS_DATA]Bnnn_seadas.dat** WAVE> **exit**	Y	Use PVWAVE for this section **Blocks read = 86983** **Blocks written = 86983** **Bad reads = 0**
7) FLOODS> **RUN MRFB:[PMS.SEADAS]READM200_FILE** a) Default directory: **PMSDATA:** b) Flight number: **Bnnn** c) Disk file name: **SEADAS_DATA:[SEADAS_DATA]Bnnn_seadas.dat** d) Comment string: e) Start time: *0 if unknown (T/O – 5 min)* f) End time: *240000 if unknown (Land + 5 min)* g) Read 2DC: **Y** h) Read 2DP: **Y** i) Secondary data: **Y** j) FSP-SYNC: **Y** k) cmd.str: **Y** l) Auto time correction: **N** m) Full length secondary:**N**	Y	**Start = 103000** **End = 151500** Ignore error message scroll (vestigial error from tapes) **Are FRW, FSP, IMB, PCA,SEC files in PMSDATA?** **Are they non-zero in size?**
8) FLOODS> **WAVE** i). WAVE> **imagedisplay** a) 2D directory name: **PMSDATA:** b) Flight number: **Bnnn** c) File generation no: **0** d) Time from IWC plot: **N** e) Select probe: (**1**) 2DC (**2**) 2DP f) Start time: *As in 7e above* g) End time: *As in 7f above* h) Time interval (sec): **5** recommended (0 for all images) ii). WAVE> **auto_image** a) 2D directory name: **PMSDATA:** b) Flight number: **Bnnn** c) Enter date: **YYYYMMDD** d) Enter start time: *0 if unknown (T/O – 1 min)* e) Enter end time: *240000 if unknown (Land – 1 min)* f) Enter time interval (sec) between successive imaged blocks: **10** iii). WAVE> **exit** to create files iv). FTP ascii *.PS files from PMSDATA: to PC v). Load each into Ghostview or other pdf-converter vi). Output as pdf file (720 dpi resolution), appending name prefix of **CORE-CLOUD-PHY**_ to converted files	Y	2D image display and printing Must be done from FLOODS itself. **Note any problems with images** **Noise on 2DP approx 14:30 – 14:50** Prepare imagery for Core data From own PC again **Start = 105000** **End = 151000** !! 20s as too large otherwise !! FAAM_YYYYMMDD_R0_ Bnnn_2Dx-images.ps Notes on this in instructions

9) FLOODS> **RUN MRFB:[PMS.SPEC2D.AUTO]PROCESS2D_AUTO** a) Flight number: **Bnnn** b) Directory: **PMSDATA:** c) File generation: *Hit enter* d) Time correction: *Time offset of the 2D data* e) TAS: **Y** f) MFD directory: **MFDDATA:Bnnn_MFDX** g) Probe number: (**1**) 2DC (**2**) 2DP (**0**) Both *0 unless either probe known to be faulty* h) Start time: *0 if unknown (T/O + 30sec)* i) End time: *240000 if unknown (Land – 30sec)* j) Nominal averaging: **0.2** seconds for conversion to M5 k) Particle type 2DC: **8** if known to be in ice cloud **11** if known to be in water cloud l) Particle type 2DP: **8** if known to be in mixed-phase **8** if unknown m) Coefficient choice: **2** n) Output root filename: **PMSDATA:Bnnn_PROC2D**	Y	NB. an error message may appear, floating point exception, rerun and use time quoted in error message, repeat until successful. **X = A** **Start = 10:30** **End =** 15:15 **Time data processed to =** 15:15 **2dproc files present? Y** *.2dc, *.2dp and *.dat
10) FLOODS> **WAVE** i) WAVE> **WRITE_PROC2D_TO_M5, 'PMSDATA:BNNN_PROC2D.DAT', 'PMSDATA:BNNN_M5PROC2D'** ii). **exit**	**Y**	Use PVWAVE for this section Error message about HDDR file should be ignored. **Records = 45782, 178**
11) FLOODS> **MODIFY** a) Modifying datasets: **pmsdata:Bnnn_m5proc2D** b) Datset: **mfddata:Bnnn_mfdX** c) New dataset: **mfddata:Bnnn_mfdY** d) Parameter description file: leave blank to use default	**Y**	**X = A** **Y = (X+1) = B**
12) CHECKS: Are 2DC/2DP IWC of comparable magnitude and well-correlated with Nevzorov TWC? *In flight_plot, parameters* *Nevzerov TWC para 605* *2DC IWC para 1302* *2DP IWC para 1312*	Y	**Correlated? Y**

CLOUD PHYSICS PROCESSING LOG

Flight number: **B278**
Date of Flight: 09/03/07

C) PCASP PROCESSING		
Processing Stage	Done?	Comments
1) Complete stage 7) in 2D processing Ensures Bnnn_FSP.DAT containing raw PCASP data is written to directory PMSDATA:	Y	
2) FLOODS> **RUN MRFB:[PMS.PCASP]PROCPCASP_NEW** a) Flight number: **Bnnn** b) File name: **PMSDATA:Bnnn_FSP.DAT** c) Root output name: **PMSDATA:Bnnn_PROCPCASP** Produces PMSDATA:Bnnn_PROCPCASP.DAT (binary) PMSDATA:Bnnn_PROCPCASP.OUT (ascii) d) Minimum size channel: *default = 1* *If smallest size channel are known to be noisy the value of the highest noise free channel to be entered here* e) Calibration volume flow rate: *Use the most recent value. 1.8ccs^{-1}* *Calibration files to be stored in **Exeter*** *Entering zero gives default value = 1.0 cm^{3}s^{-1}* f) Time correction: *Same value as used in 2D processing stage 9d* g) Start time: *0 if unknown* h) End time: *240000 if unknown*	Y	**Min size = 1** **Vol flow rate =** 1.15
3) FLOODS> **WAVE** i).WAVE> **write_procpcasp_to_m5, 'pmsdata:Bnnn_procpcasp.dat', 'pmsdata:Bnnn_m5procpcasp'** ii). WAVE> **exit**	Y	Use PVWAVE for this section
4) FLOODS> **MODIFY** a) Modifying datasets: **pmsdata:Bnnn_m5procpcasp** b) Dataset: **mfddata:Bnnn_mfdX** c) New dataset: **mfddata:Bnnn_mfdY** d) Parameter description file: *leave blank to use default*	Y	**X = B** **Y = X+1 = C**
5) CHECKS Are PCASP and JW peaks synchronous? *In flight_plot, parameters* *Neph – total blue scatter.* *PCASP conc para 1550*	Y	**Merged OK? Y**

FAAM Dropsonde Flight Log

Flight No.	B278	Date	09/03/2007
Page No.	1 of 1	Operator	SWH

GMT	**Sonde No.**	**Event**	**Comments**
		e.g. launch, splashdown	*e.g. windata? PTH data? Lat/Long*
142409	1	Launch	526.90 -25.60 73.81 113.60 12.50 -10.50 -28.504100 65.102200 5186.00 0
143016	1	Land	985.77 0.70 95.39 57.75 15.59 -10.40 -28.615818 65.080115 416.31 10
142703	2	Launch	526.80 -25.80 80.23 110.60 10.70 -10.80 -28.169700 65.269900 5186.90 0
143254	2	Land	986.68 0.47 97.27 56.78 15.64 -12.46 -28.276558 65.246595 408.01 10
142933	3	Launch	527.20 -25.30 73.87 110.00 10.00 -11.10 -27.873100 65.417200 5181.80 0
143554	3	Land	988.49 0.43 95.42 55.99 17.00 -11.29 -27.961952 65.402484 393.16 8
143218	4	Launch	526.90 -25.40 81.04 108.30 9.40 -11.00 -27.550200 65.575200 5185.30 0
143840	4	Land	987.28 0.33 81.36 58.27 17.18 -11.67 -27.642502 65.559834 402.85 10
143503	5	Launch	526.90 -25.20 76.69 107.70 9.00 -10.60 -27.216100 65.741700 5185.30 0
144135	5	Land	987.24 -0.19 94.91 51.81 15.05 -11.01 -27.308362 65.722102 408.11 7
144133	6	Launch	526.90 -24.90 73.27 108.60 9.30 -10.50 -26.468100 65.458200 5185.90 0
144752	6	Land	986.52 -0.31 85.05 55.55 16.09 -10.93 -26.519924 65.446830 407.22 10

Flight: B278

KEY

- Not Fitted
- Fitted, Not Operated
- Duff Data
- Minor Problems
- OK

Thermometers
- Cabin Temperature:
- Heimann:
- Deiced Temp:
- Non-deiced Temp:

Hygrometers
- FWVS:
- General Eastern:
- Johnson Williams:
- Nevzorov:
- Total Water Probe:

Cameras
- Downward Facing:
- Forward Facing:
- Rearward Facing:
- Upward Facing:

Navigation + Aircraft
- Cruciform GPS:
- GIN Applanix:
- INU Honeywell:
- Radar Altimeter:
- RVSM IAS:
- RVSM Static Pressure:
- XR5 GPS:

Report Created 15/03/2007 12:14:58

Misc Core
- AMTG:
- AVAPS:
- Cabin Pressure:
- Fax machine:
- Printer:
- S9 Static Pressure:
- Satcom C:
- Satcom H:
- Turb Centre-Static:
- Turb Left Right:
- Turb Up-Down:
- Turb Horizontal Chk:
- Turb Vertical Chk:
- Weather Radar:

DLUs:
- DLU AERACK:
- DLU BBR Lower:
- DLU BBR Upper:
- DLU Core Chem:
- DLU Core Consoles:
- DLU Port Aft:
- DLU Port Fwd:
- DLU Stbd Fwd:

Radiometers
Lower:
- BBR (clear) Lower:
- BBR (IR) Lower:
- BBR (red) Lower:

Upper:
- BBR (clear) Upper:
- BBR (IR) Upper:
- BBR (red) Upper:

- ARIES:
- DEIMOS:
- IR Camera:
- JNO2 Lower:
- JNO2 Upper:
- JO1D Lower:
- JO1D Upper:
- MARSS:
- SHIMS Lower:
- SHIMS Upper:
- SWS:
- TAFTS:

Last Updated: 14/03/2007 15:55:53

Cloud Probes
- 2DC:
- 2DP:
- FFSSP:
- PCASP:

- ADA:
- CCN:
- CDP:
- CIP 100:
- CIP 25:
- CPI:
- CVI:
- SID1:
- SID2:

Aerosol
- CPC 3025A:
- Filters 47mm:
- Filters 90mm:
- Neph - Dry:
- Neph - Wet:
- PSAP:
- AMS:
- CPC 3025 (AMS)
- INC:
- VACC:
- CPC 3010A (CVI):

Chemistry
- CO Aerolaser 5002:
- NOx TE42C:
- Ozone TE49C:
- Ozone TE49:
- SO2 TE43C:
- TDLAS (NIR) CH4:
- TDLAS (NIR) CO2:

- FAGE:
- Formaldehyde:
- NOxy:
- ORAC:
- PAN:
- PERCA:
- Peroxide:
- PTRMS:
- TDLAS (1C):
- WAS Bags:
- WAS Bottles:

Misc Non-Core
- CASI/ATM:
- LIDAR:
- LTI:
- SAW Hygrometer:

Faults / Incidents Log

Flight No. B278
Date: 09 March 2007

Instruments

1. DRS – On startup, LBBR DLU wouldn't initialise, even after resetting CB several times. Used option 12 from DRS Menu, restart DRS process, then okay.
2.

Aircraft

Nil

Satcom-H Calls

Nil

Post Flight - Turb Probe Water Traps

1. Indicate Amount of Water: a) Nil b) 1-2 drops c) ¼ full or more d) Ice present
2. Emptied by:
3. Dried by:

Flight Manager's Data Processing Status

Flight No: B278 Date of flight: 9/3/07
Flight Manager: AMW

Mfd data must be backed up within a week.
If it can't be done by the Cloud Physics Operator in that time the FM must back it up

On day of flight		
Action	**Link / Option**	**Date**
Update Database & Note BBR Fit	Database	10/3/07
Create Fltcons & check BBR fit	Option 9	10/3/07
Transfer & process Data	Option 2	10/3/07
Ftp qldata to BADC	project_spaces/faam/ quicklook	10/3/07
Check Rawdata	flight_plot	10/3/07
Raw data to BADC	Option 7	10/3/07
Copy & Convert Fltsumm file	Copy from optical to fltsumm directory Set def fltsumm run tarexec:convert_summ	10/3/07
Edit Fltsumm/ send to BADC	Option 10	10/3/07
Copy Flight logs to Seagate	Flight Logs	10/3/07
Download photos, clear camera & email Doug	To Flight Logs and Turb Probe Photos	-
Ftp CGPS.bin file to BADC	project_spaces/faam/ javad_gps	10/3/07
Check MFDdata	flight_plot	10/3/07

On day after flight		
Action	**Link / Option**	**Date**
Ftp PSAP to FLOODS	Bnnn_psap_data	-
Merge PSAP into mfddata	wave .run mergepsap bnnn_mfda (b,c)	-
Record any MFD changes	edit mfddata:mfddata.txt	-
NETCDF to BADC	Option 4	10/3/07
Upload .nc from BADC	To USB stick (WS_FTP Pro)	10/3/07
Data quality check	Run Checkg on Linux pc	10/3/07
Ftp file to BADC	/incoming/faam/campaign-processed-core	10/3/07
Print out quality file	put in Faults Book	-
Backup raw data to optical then to firesafe	Option 6	10/3/07
Backup mfd if Cloud Physics Operator can't	MFD Backup Instructions.doc	-
Ftp mfd to BADC	Not yet set up	Watch this space
Video tapes to PI or cupboard	Video Tape Log	10/3/07
Complete & save this form	**Data_Processing_ Logs**	10/3/07

Pre-Flighter's Log

Date: 09/03/07 Flight No: B278 Pre-Flighter: MS

Item	√ or x	Location	Action	Comments
1	✓	Hangar	Collect Dustbin, put on a/c	
		Aircraft Cabin		
2	✓	Core Chemistry	Gases x 3 ON	
3	✓	Cabin	All Racks Checked	
4	✓	Fwd CorCon	All reqd CBs made	
5	✓	Aft CorCon	CBs made, PCs ON	
6	✓	HORACE	Optical Disk loaded	
7	✓	HORACE	Recording data	
8	✓	HORACE	DLU Status Checked	LBBR waiting for init to load wouldn't
9	✓	HORACE	HORACE Status Checked	clear. Restarted DRS process then okay
10	✓	Satcom H	Power LED ON	
11	✓	Nevzorov	Checked and OFF	
12	✓	GPS	Checked	NO SVs visible
13	✓	INU	Align	
14	✓	Cameras Pictures	Checked x 4 OK	
15	✓	Core Chemistry	Instruments Checked OK	
16	✓	Core Chemistry	CO Flows Checked OK	
17	X	FWVS	Set up	
18	✓	Video x 2	Records okay, Rewind	
19	✓	Delced Rosemount	Heater Checked / Set	
20	✓	Heimann	Calibration Checked	
21	✓	TWC	ON & Checked	
22	✓	GE	Balance checked	
23	✓	INU	Navigate then back to Align	
24	✓	Hubs x 4	Checked ON	
25	✓	Fwd Console	Miss. Sci Laptop CB made	& CB on Port Fwd SSP
26	✓	CNC	Butanol filled	
27	✓	CGPS	Set up	No satellites visible
28	✓	Miss. Sci Laptop	Checked Onboard	Behind co Pilot

External Checks overleaf →

Pre-Flighter's Log

Item	√ or x	Location	Action	Comments
		External		
29		Turb Probe	Clean if reqd, Photo taken	
30	✓	JW	Cleaned & Checked	
31	✓	DI Rosemount	Cleaned & Checked	
32	✓	NDI Rosemount	Cleaned & Checked	
33	✓	Nevzorov	Cleaned/windings checked	
34	✓	GE	Cleaned & Checked	
35	✓	Lower BBRs	Domes cleaned/checked	
36	✓	Camera Windows	Cleaned	
37	✓	Heimann	Lens checked OK	
38	✓	TWC Cover	Fitted if required	
39	✓	All other covers	Removed	
40	✓	Dustbin	Returned to hangar	
41	✓	Tools	Check ALL in Toolkit	
42	✓	Tools	Avalon informed	

		Avalon Checks	Signed
43	X	Upper BBRs Checked & Cleaned	
44	/	ICEX applied	
45	/	Traps empty (weekly only)	

MISSING LOG SHEETS:

The following log sheets are not available for flight B278:

Log	Reason
Core Chemistry	pre flight only, unmanned operation on auto calibrate so no In Flight log

Document control

Revision	Date	Author	Comments
r0	10 Oct 2007	Doug Anderson	Initial version with no missing logs
r1			
r2			

VIDEO RECORDINGS:

2 x For/Rearward Facing Cameras
2 x Downward Facing Cameras

Digital8 video recordings from this flight reside with :

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